

Amendments to the Claims:

1. (Currently amended) ~~A An-antenna-space time transmit~~ diversity method, comprising:
providing an original block of bits having first and second parts;
modulating the original block of bits with a carrier signal to produce a modulated block of information having first and second parts that respectively correspond to said first and second parts of said original block of bits;
producing a further block of information including first and second parts which respectively correspond to the ~~first and second~~ and first parts of the modulated block and which are respective negative and positive complex conjugates of the ~~first and second~~ and first parts of the modulated block; and
using first and second antennas to respectively transmit the modulated block and the further block over a wireless communication link such that the first part of the modulated block is transmitted in timewise correspondence with the second part of the further block and the second part of the modulated block is transmitted in timewise correspondence with the first part of the further block.
2. (Currently amended) The method of Claim 1, wherein ~~one of the parts of the further block is a negative complex conjugate of the corresponding part of the modulated block~~ each of the first and second parts comprise a plurality of bits.
3. (Original) The method of Claim 1, wherein said providing step includes providing the first and second parts of the original block in parallel, and wherein said modulating step includes modulating the first and second parts of the original block in parallel.
4. (Currently amended) The method of Claim 1, wherein said ~~demodulating~~ modulating step includes one of FSK and GFSK ~~demodulating~~ modulating.
5. (Currently amended) A method of determining an original block of bits from first and second antenna signals received via a wireless communication link, comprising:

producing a received block of information from the first and second antenna signals;
complex conjugating first and second parts of the received block to produce first and second complex conjugate parts; and
combining the first and second parts ~~and the first and second~~ with respective second and first complex conjugate parts and fading parameter information indicative of ~~first and second~~ estimated fading parameters ~~respectively~~ associated with the first and second antenna signals to produce a combined result that is representative of the original block of bits.

6. (Original) The method of Claim 5, wherein the fading parameter information includes a complex conjugate of the first estimated fading parameter and also includes the second estimated fading parameter.

7. (Currently amended) The method of Claim 5, wherein said combining step includes multiplying the first and second parts by a complex conjugate of the first estimated fading parameter to produce first and second products, respectively, and multiplying the first and second complex conjugate parts by a negative of the second estimated fading parameter and the second estimated fading parameter, respectively, to produce third and fourth products, respectively.

8. (Currently amended) The method of Claim 7, wherein said combining step includes adding the first product to the ~~third~~ fourth product to produce a first received part, and ~~subtracting the fourth product from~~ adding the second product to the third produce to produce a second received part, said combined result including the first and second received parts.

9. (Original) The method of Claim 8, including demodulating the first and second received parts to produce a demodulated result, and making a determination that the demodulated result is the original block of bits.

10. (Original) The method of Claim 9, wherein said demodulating step includes demodulating the first and second received parts in parallel to produce first and second constituent parts of the demodulated result.

11. (Original) The method of Claim 9, including formatting the first and second received parts into a further block, said demodulating step including demodulating the further block to produce a demodulated block, said making step including making a determination that the demodulated block is the original block of bits.

12. (Original) The method of Claim 9, wherein said demodulating step includes FSK demodulating.

13. (Original) The method of Claim 9, wherein said demodulating step includes GFSK demodulating.

14. (Currently amended) ~~A An antenna space time transmit diversity~~ apparatus, comprising:
an input for receiving an original block of bits having first and second parts;
a modulator coupled to said input for modulating the original block of bits with a carrier signal to produce a modulated block of information having first and second parts that respectively correspond to said first and second parts of the original block of bits;
an encoder coupled to said modulator for receiving the modulated block of information and producing therefrom a further block of information including first and second parts which respectively correspond to the ~~first and second~~ and first parts of the modulated block and which are respective negative and positive complex conjugates of the ~~first and second~~ and first parts of the modulated block; and
first and second antennas respectively coupled to said modulator and said encoder for respectively transmitting the modulated block and the further block over a wireless communication link such that the first part of the modulated block is transmitted in timewise correspondence with the second part of the further block and the second part of the modulated block is transmitted in timewise correspondence with the first part of the further block.

15. (Currently amended) The apparatus of Claim 14, wherein ~~one of the parts of the further block is a negative complex conjugate of the corresponding part of the modulated block~~ each of the first and second parts comprise a plurality of bits.

16. (Currently amended) The apparatus of Claim 14, wherein said ~~demodulator~~ modulator includes one of an FSK demodulator and a GFSK ~~demodulator~~ modulator.

17. (Currently amended) The apparatus of Claim 14, wherein a portion of said encoder is provided in said ~~demodulator~~ modulator.

18. (Original) The apparatus of Claim 14, provided as a Bluetooth device.

19. (Original) The apparatus of Claim 14, wherein said modulator is operable for modulating the first and second parts of the original block in parallel.

20. (Currently amended) A wireless communication apparatus, comprising:

a wireless communication interface for receiving from a wireless communication link first and second antenna signals that represent an original block of bits, said wireless communication interface operable for producing a received block of information from said first and second antenna signals;

a complex conjugator coupled to said wireless communication interface for complex conjugating first and second parts of the received block to produce first and second complex conjugate parts; and

a combiner coupled to said complex conjugator and to said wireless communication interface and having an input for receiving fading parameter information indicative of first and second estimated fading parameters respectively associated with the first and second antenna signals, said combiner operable for combining the first and second parts ~~and the first and second~~ with respective second and first complex conjugate parts and the fading parameter information to produce a combined result that is representative of the original block of bits.

21. (Original) The apparatus of Claim 20, wherein the fading parameter information includes a complex conjugate of the first estimated fading parameter and also includes the second estimated fading parameter.

22. (Currently amended) The apparatus of Claim 20, wherein said combiner includes multipliers for multiplying the first and second parts by a complex conjugate of the first estimated fading parameter to produce respective first and second products and for multiplying the first and second complex conjugate parts by a negative of the second estimated fading parameter and the second estimated fading parameter, respectively, to produce respective third and fourth products.

23. (Currently amended) The apparatus of Claim 22, wherein said combiner includes adders coupled to said multipliers for adding the first product to the ~~third~~ fourth product to produce a first received part and for ~~subtracting the fourth product from~~ adding the second product to the third product to produce a second received part, said combined result including the first and second received parts.

24. (Original) The apparatus of Claim 23, including a demodulator coupled to said adders for demodulating the first and second received parts to produce a demodulated result and for providing the demodulated result as a determination of the original block of bits.

25. (Original) The apparatus of Claim 24, wherein said demodulator is operable for demodulating the first and second received parts in parallel to produce first and second constituent parts of the demodulated result.

26. (Original) The apparatus of Claim 24, including a formatter coupled between said demodulator and said adders for formatting the first and second received parts into a further block, said demodulator operable for demodulating the further block to produce a demodulated block and for providing the demodulated block as a determination of the original block of bits.

27. (Original) The apparatus of Claim 20, wherein said demodulator includes one of an FSK demodulator and a GFSK demodulator.
28. (Original) The apparatus of Claim 20, provided as a Bluetooth device.